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A Systematic Study on the Marine Sponges in Korea
9 Ceractinomorpha

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한국산 해산해면류의 계통분류학적 연구
9. 일축해면류

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적 요

한국산 일축해면류를 연구하기 위해 삼면 연안과 16개 도서지방에서 1987년부터 1988년 8월까지 채집한 표본과 그동안 한남대학교 생물학과에 미해결종으로 보관되어 있던 표본들을 동정, 분류한 결과 12과 21속 41종이 분류되었고 이중 13종은 한국미기록종이고 2종은 신종이었다. 한국미기록종과 신종에 대하여는 특기 또는 기재와 도판을 첨가하였다.

Key words: systematics, marine sponge, Ceractinomorpha, Korea.

INTRODUCTION

On the Systematic study of Korean marine Ceractinomorpha sponges, 66 species were recorded from Korean waters (Kim *et al.*, 1968; Rho *et al.*, 1969; Rho &Sim, 1972a, 1972b, 1976, 1979; Rho & Lee,

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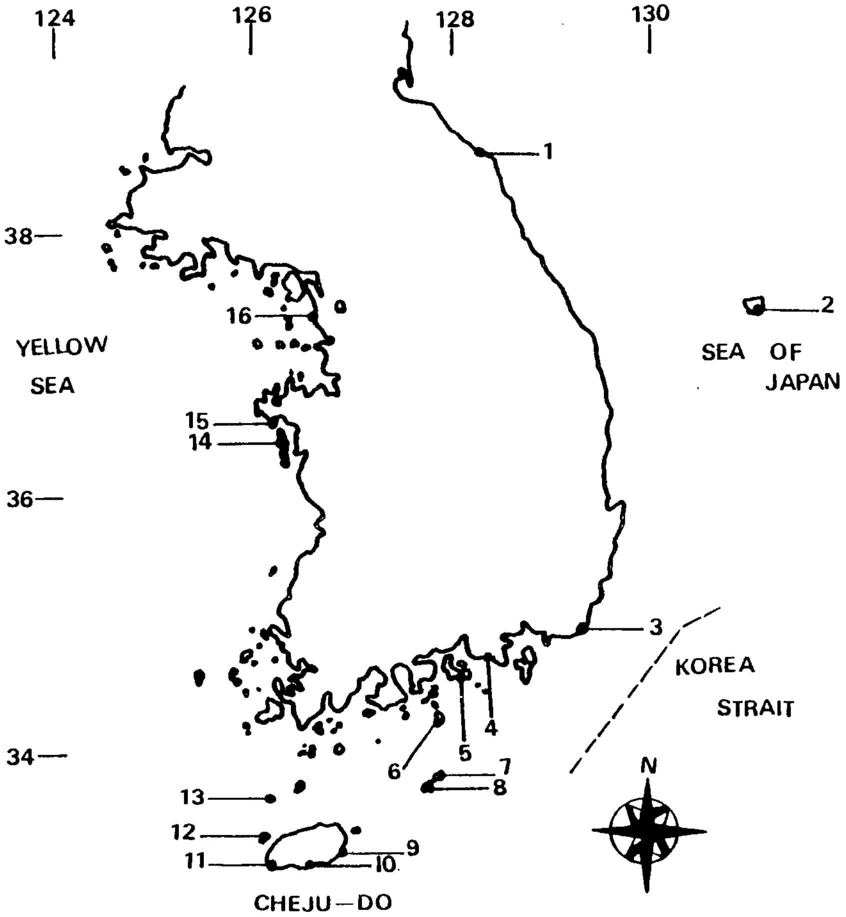

Fig. 1. A map showing the localities where the specimens were collected.
1, Namae; 2, Ullŭngdo; 3, Mip'o; 4, Samch'ŏnp'o; 5, Mijo-ri; 6, Kŭmodo; 7, Sŏdo; 8, Kŏmundo; 9, Sŏngsanp'o; 10, Sŏgwip'o; 11, Mosŭlp'o; 12, Piyangdo; 13, Ch'ujado; 14, Anmyŏndo; 15, Anhŭng; 16, Chakyakto.

1976; Sim, 1981, 1982, 1985; Rho & Yang, 1983; Sim & Bae, 1987; Sim & Kim, 1988).

The present study is based on the materials which were collected from 16 localities during the period from 1987 to 1988 (Fig. 1), and some unidentified specimens preserved in the Department of Biology, Han Nam University. The identified Ceractinomorpha consist of 41 species, 21 genera and 12 families. Among them, 2 species were new and 13 species were newly recorded in Korea.

LIST OF SPECIES

Phylum Porifera Grant, 1836	해면동물 문
Class Demospongia Sollas, 1885	보통해면강
Subclass Ceractinomorpha Levi, 1953	일축해면 아강

Order 1. Halichondrida Levi, 1953	해변해면 목
Family 1. Halichondriidae Gray, 1867	해변해면 과
1. *Halichondria panicea* (Pallas, 1776)	회색해변해면
2. *Halichondria okadai* (Kadota, 1922)	검정해변해면
3. *Halichondria oshoro* Tanita, 1961	황록해변해면
Family 2. Hymeniacidonidae De Laubenfels 1936	하이메니아시돈 과
4. *Hymeniacidon sinapium* De Laubenfels, 1930	주황해변해면
Order 2. Poecilosclerida Topsent, 1928	다골해면 목
Family 3. Ophlitaspongidae De Laubenfels, 1936	바늘뼈해면 과
5. *Ophlitaspongia noto* Tanita, 1963	바늘뼈해면
6. **Ophlitaspongia pennata californiana* De Laubenfels, 1932	캘리포니아바늘뼈해면(신칭)
7. *Mycale adhaerence* (Lambe, 1893)	깃해면
8. *Neofolitispa dianchora* (De Laubenfels, 1935)	두닻바늘뼈해면
9. **Desmacella rosea* Fristedt, 1887	장미띠해면(신칭)
10. *Clathria spinispicula* Tanita, 1968	침유령해면
11. *Clathria toxipraedita* Topsent, 1913	화살유령해면
12. *Clathria terranova* Dendy, 1924	창살유령해면
13. *Clathria madrepora* Dendy, 1921	돌산호유령해면
14. ***Clathria mosulpia* sp. nov.	모슬침유령해면(신칭)
15. *Clathria dayi* Levi, 1963	데이침유령해면(신칭)
16. *Clathria parva* Levi, 1963	작은침유령해면(신칭)
17. *Axociella cylindrica* Hallman, 1920	둥근축털해면
18. *Axocielita calla* (De Laubenfels, 1934)	깃축뼈해면
Family 4. Microcionidae Hentschel, 1923	유령해면 과
19. *Microciona longistyla* Burton, 1959	기둥유령해면
Family 5. Myxillidae Hentschel, 1923	끈적해면 과

20. *Myxilla setoensis* Tanita, 1961	넙적끈적해면
21. *Myxilla incrustans* (Johnston, 1842)	껍질끈적해면
22. *Myxilla productus* Hoshino, 1981	긴끈적해면
23. *Myxilla bivalvia* Tanita, 1967	덥게끈적해면
24. **Myxilla sigmatifera* (Levi, 1963)	시그마끈적해면
25. *Lissodendoryx isodictyalis* (Carter, 1882)	두드럭끈적해면
Family 6. Tedaniidae Ridley & Dendy, 1887	테다니해면 과
26. *Iotrochota baculifera* Ridley, 1884	보라바귀해면
27. *Tedania brevispiculata* Thiele, 1903	테다니해면
Family 7. Plocamiidae Topsent, 1928	곱슬해면 과
28. *Lissoplocamia tocushima* Tanita, 1970	미끈이해면
Order 3. Haplosclerida Topsent, 1928	단골해면 목
Family 8. Haliclonidae De Laubenfels, 1932	보라해면 과
29. *Haliclona permollis* (Bowerbank, 1866)	보라해면
30. *Haliclona densaspicula* Hoshino, 1981	빽빽침보라해면
31. **Haliclona perlucida* (Griessinger, 1971)	진주보라해면(신칭)
32. ***Haliclona ulreungia* sp. nov.	울릉보라해면(신칭)
Family 9. Adociidae De Laubenfels, 1936	아도시해면 과
33. *Petrosia ushitsuensis* Tanita, 1963	바위해면
34. **Petrosia nigricans* Lindgren, 1897	검정바위해면(신칭)
Family 10. Renieridae Schmidt, 1870	레니에해면 과
35. **Gellius arcoferus* Vosmaer, 1885	판솜덩이해면(신칭)
36. **Reniera ventilabrum* Fristedt, 1887	판레니에해면(신칭)
37. **Reniera pigmentifera* Dendy, 1905	보라레니에해면(신칭)
Family 11. Callispongiidae De Laubenfels, 1936	예쁜이해면 과
38. *Callispongia elegans* (Thiele, 1899)	예쁜이해면

39. *Callispongia confoederata* (Ridley, 1884) 보라예쁜이해면

40. *Callispongia elongata* (Ridley & dandy, 1886) 길쭉예쁜이해면

Family 12. Coelosphaeridae Hentschel, 1923 강해면 과(신칭)

41. *Coelosphaera physa* (Schmidt, 1875) 거품강해면(신칭)

The asterisks (*) indicate the species which were newly recorded in Korea and asterisks (* *) indicate the species which were new.

SYSTEMATIC ACCOUNT

Family Halichondriidae Gray, 1867 해변해면 과

1. **Halichondria panicea** (Pallas, 1766) 회색해변해면

Material examined: Sŏngsanp'o, 18/V/1983; Sŏgwip'o, 19/VII/1987; Sŏdo, 29/VII/1988; Kŭmodo, 31/VII/1988.

2. **Halichondria okadai** (Kadota, 1922) 검정해변해면

Material examined: Mijo-ri, 13/VII/1983; Sŏngsanp'o, 8/VII/1985; Sŏgwip'o, 18/VII/1987; Sŏdo, 29/VII/1988; Kŭmodo, 31/VII/1988.

3. **Halichondria oshoro** Tanita, 1961 황록해변해면

Material examined: Kŭmodo, 31/VII/1988.

Family Hymeniacidonidae De Laubenfels, 1936 하이메니아시돈 과

4. **Hymeniacidon sinapium** De Laubenfels, 1930 주황해변해면

Material examined: Sŏngsanp'o, 8/VII/1985; Anhŭng, 8/V/1987, 14/V/1988; Sŏgwip'o, 18/VII/1987, 28/VII/1988; Kŏmundo, 24/VII/1988; Sŏdo, 29/VII/1988; Kŭmodo, 31/VII/1988.

Family Ophlitaspongidae De Laubenfels, 1936 바늘뼈해면 과

5. **Ophlitaspongia noto** Tanita, 1963 바늘뼈해면

Material examined: Sŏgwip'o,18/VII/1987; Chakyakto, 16/IV/1988; Anhŭng, 14/V/1988.

6. ***Ophlitaspongia pennata californiana** De Laubenfels, 1932 켈리포니아바늘뼈해면

(Pl. 1, Figs. 1-4)

Ophlitaspongia pennata (Lambe, 1895) *californiana* De Laubenfels, 1932 (pp. 103-104, text-fig. 62).

Ophlitaspongia pennata california: Bakus & Green, 1987(p. 73).

Material examined: Sŏgwip'o, 1/VII/1984, 5/VIII/1986; Sŏgwip'o (fish net), 6/VII/1985.

Remarks: This sponge is thin encrusting. Size up to 1.5mm thick spreading laterally indefinitely. It is similar to *Ophlitaspongia noto* in shape, but differs in skeletal arrangement. The texture is firm and the surface of the body is superficially velvety. Colour in life is vermilion, but in spirits is dirty brown.

Spicules: Subtylostyle .... 338-353 × 15-18μm.
Slender subtylostyle .... 330-483 × 4-9μm.
Style .... 266-435 × 13-18μm.
Large toxa .... 69-140 × 2- 4μm.
Small toxa .... 12-46μm.

Distribution: Korea (Cheju Island), California, Mexico.

7. ***Mycale adhaerens*** (Lambe, 1893) 깃해면

Material examined: Mosŭlp'o, 29/VII/1988; Kŏmundo, 29/VII/1988; Namae, 9/VIII/1988.

8. ***Neofolitispa dianchora*** (De Laubenfels, 1935) 두닻바늘뼈해면

Material examined: Piyangdo, 20/VI/1985; Mosŭlp'o, 6/IX/1986, 18/VII/1987.

9. ***Desmacella rosea*** **Fristedt, 1887** 장미띠해면 (Pl. 2, Figs. 1-2)

Desmacella rosea Fristedt, 1887 (pp. 439-440, pl. 24, figs. 32-35, pl. 28, fig. 13).

Material examined: Ch'uja-do (100 depth), 6/II/1982.

Remarks: This sponge is flat or leaf-like shpae and size, up to 7cm × 6.5cm × 1cm. Texture is firm and surface is smooth. Colour in life is yellow, but in spirits is ivory.

Spicules: Large tylostyle .... 700-825 × 8-13μm.
Middle tylostyle .... 401-591 × 7-12μm.
Small tylostyle .... 181-253 × 2- 6μm.
Large sigma .... 32-41μm.
Small sigma .... 18-26μm.

Distribution: Korea (Korea Strait), the Atlantic Ocean, Bering Sea, Arctic Ocean.

10. ***Clathria spinispicula*** Tanita, 1963 침유령해면

Material examined: Mosŭlp'o, 8/IV/1987, 19/VII/1987.

11. ***Clathria toxipraedita*** Topsent, 1913 화살유령해면

Material examined: Mosŭlp'o, 18/VII/1987.

12. ***Clathria terranova*** Dendy, 1924 창살유령해면

Material examined: Mosŭlp'o, 8/VI/1987, 18/VII/1987.

13. ***Clathria madrepora*** Dendy, 1921 돌산호유령해면

Material examined: Sŏgwip'o, 15/VII/1982; Mosŭlp'o, 18/VII/1987.

14. ****Clathria mosulpia*** sp.nov. 모슬침유령해면 (Pl. 3, Figs. 1-5)

Material examined: Three specimens(Por. 9, Por. 9-1, Por. 9-2), Mosŭlp'o (fish net), 18/VII/1987, H.S. Byeon & H.Y. Kim.

Holotype: Por. 9, Deposited in Natural History Museum of Han Nam University.

Paratype: Por. 9-1, Por. 9-2, Deposited in the Department of Biology, Han Nam University.

Description: This sponge is flabellate or leaf-like shape and size up to 4cm × 7cm × 0.5cm. Texture is tough and elastic. The surface of the body is a little velvety with the protruding spicules. Pores are dispersed on the body and honeycomb-like form, but the oscules are not observed. Dermal membrane is covered with spicules which look branch. Colour in life is yellow, but in alcohol is ivory.

Spicules:	Style	242-266 × 12-14μm.
	Acanthostyle	91-100 × 7μm.
	Large spiny toxa	522-768 × 5- 7μm.
	Toxa	181-467 × 2- 5μm.
	Isochela	12-18μm.

Remarks: The new species is similar to *Clathria barleei* De weerdt & Van soest 1986 in shape, but differs in spicules. *Clathria barleei* has no spiny toxa, but the new species has large spiny toxa and very rare strongyle.

Distribution: Korea (Cheju-Island).

15. ***Clathria dayi*** Levi, 1963 데이침유령해면 (Pl. 4, Figs. 1-2)

Clathria dayi Levi, 1963 (pp. 51-52, pl. 8, fig. B, text-fig. 58).

Material examined: Mosŭlp'o (fish net), 18/VII/1987.

Remarks: This sponge is a branch type, measuring up to 2cm in diameter, 20cm in length. Texture is elastic and surface is uneven. Dermal membrane is thin. Pores and osculs are dispersed on the body. Colour in spirits is pale brown.

Spicules:	Thick style	139-260 × 10-17μ
	Slender style	253-358 × 1- 4μm.
	Acanthostyle	100-130 × 4- 6μm.
	Spiny toxa	213-346 × 3- 4μm.
	Toxa	60-106 × 1- 2μm.
	Isochela	15-35μm

Distribution: Korea (Cheju-Island), South Africa.

16. ***Clathria parva*** Levi, 1963 작은침유령해면 (Pl. 4, Figs. 3-4)

Clathria parva Levi, 1963 (pp. 56-57, pl. 10, fig. D, text-fig. 64).

Material examined: mosŭlp'o (fish net), 18/VII/1987.

Remarks: Sponge covered coral branch, 2mm in diameter, surface of the body is smooth. Colour in spirits is pale brown.

Spicules:	Style	157-280 × 2- 6μm.
	Spiny style	240-300 × 7-12μm.
	Acanthostyle	95-110 × 5- 8μm.
	Spiny toxa	100-123 × 2μm.
	Toxa	90- 99 × 2μm.
	Isochela	12-13μm.

Distribution: Korea (Cheju-Island), South Africa.

17. ***Axociella cylindrica*** (Ridley & Dendy, 1886) 둥근축털해면 (Pl. 5, Figs. 1-2)

Esperiopsis cylindrica Ridley & Dendy, 1886, [cited from Hallmann, 1920 (pp. 780-784)].

Axociella cylindrica: Hallmann, 1920 (pp. 780-784, pl. 37, figs. 1-3, text-fig. 2).

Material examined: Mosŭlp'o (fish net), 18/VII/1987.

Remarks: It is a sparsely and dichotomously ramose sponge with relatively long and slender, flattened branches measuring up to 1.75cm in diameter, 22cm in length. Texture is dense and consistency fairly firm and tough. In alcohol the colour is dark-grey.

Spicules: Large trachy style .... 450-570 × 20-24μ.
Trachy style .... 274-354 × 12-24μm.
Slender style .... 415-660 × 2 - 6μm.
Toxa .... 45-108 × 2 - 4μm.
Large isochela .... 13-23μm.
Small isochela .... 10-12μm.

Distribution: Korea (Cheju-Island), Port Jackson.

18. ***Axocielita calla*** (De Laubenfels, 1934) 깃축해면 (Pl. 5, Figs. 3-5)

Axociella calla De Laubenfels, 1934 (p.16).

Axocielita calla: De Laubenfels, 1954 (p. 149).

Material examined: Songsanp'o, 30/VI/1984.

Remarks: This sponge is incrusting 2mm-4mm thickness. Surface of the body is a little velvety. Texture is hard. Colour in life is red, but in spirits is dark purple.

Spicules: Subtylostyle .... 180-250 × 7-12μm.
Slender style .... 180-230 × 2- 3μm.
Large toxa .... 103-143 × 2- 6μm.
Small toxa .... 21-48μm.
Isochela .... 12μm.

Distribution: Korea (Cheju-Island), the Atlantic (Caribbean Sea), Puerto Rico.

Family Microcionidae Hentschel, 1923 유령해면 과

19. ***Microciona longistyla*** Burton, 1959 기둥유령해면

Material examined: Mosŭlp'o, 5/IV/1987.

Family Myxillidae Hentschel 1923 끈적해면 과

20. ***Myxilla setoensis*** Tanita, 1961 넓적끈적해면

Material examined: Mosŭlp'o, 18/VII/1987; Mipo, 25/X/1987.

21. ***Myxilla incrustans*** (Johnston, 1842) 껍질끈적해면

Material examined: Mosŭlp'o, 19/VII/1987.

22. ***Myxilla productus*** Hoshino, 1981 긴끈적해면

Material examined: Sŏgwip'o, 14/VII/1982; Mosŭlp'o, 18/VII/1987.

23. ***Myxilla bivalvia*** Tanita, 1967 덮개끈적해면

Material examined: Mosŭlp'o, 18/VII/1987; Mipo, 25/X/1987.

24. *Myxilla sigmatifera (Levi, 1963) 시그마끈적해면 (Pl. 6, Figs. 1-2)

Burtonanchora sigmatifera Levi, 1963 (pp. 34-35, pl. 6A, text-fig. 37).

Myxilla sigmatifera: Bakus, 1966 (p.512); De Laubenfels, 1936 (p. 94).

Material examined: Sŏgwip'o (fish net), 15/VII/1982; Mosŭlp'o (fish net), 18/VII/1987.

Remarks: Shape is irregular massive. Surface is uneven and texture is fragile. Oscules are observation, size up to 0.5-1mm. Pores are dispersed on the body. Colour in spirits is ivory.

Spicules:	Trachy style	150-302 × 6-16μm.
	Tornote	172-326 × 5-12μm.
	Large sigma	47-104μm.
	Small sigma	12-14μm.
	Large isochela	46-54μm.
	Small isochela	14-18μm.

Distribution: Korea (Cheju-Island), South Africa.

25. Lissodendoryx isodictyalis (Carter, 1882) 두드럭끈적해면

Material examined: Mosŭlp'o, 18/VII/1987.

Family Tedaniidae Ridley & Dendy, 1887 테다니해면 과

26. Iotrochota baculifera Ridley, 1884 보라바퀴해면

Material examined: Sŏgwip'o, 29/VI/1988.

27. Tedania brevispiculata Thiele, 1903 테다니해면

Material examined: Mosŭlp'o, 19/VII/1987.

Family Plocamiidae Topsent, 1928 곱슬해면 과

28. Lissoplocamia tocushima Tanita, 1970 미끈이해면

Material examined: Sŏgwip'o, 30/VII/1984.

Family Haliclonidae De Laubenfels 1923 보라해면 과

29. Haliclona permollis (Bowerbank, 1866) 보라해면

Material examined: Samchŏnp'o, 22/VII/1984; Anmyŏndo, 24/VII/1984; Kŏmundo, 24/VII/1988; Sŏdo, 26/VII/1988; Kŭmodo, 31/VII/1988.

30. Haliclona densaspicula Hoshino, 1981 빽빽침보라해면

Material examined: Mosŭlp'o, 18/VII/1987.

31. *Haliclona perlucida (Griessinger, 1971) 진주보라해면 (Pl. 6, Figs. 3-5)

Reniera perlucida Griessinger, 1971 (pp. 127-128, pl. 2, fig. 1, text-fig. 3c, text-figs. 4d and e);Pulitzer-Finali, 1983 [cited from De Weerdt & Van Soest, 1986 (p.13)].

Haliclona perlucida: De Weerdt & Van Soest, 1986 (pp. 13-16, text-figs. 9-10).

Material examined: Sŏngsanp'o, 30/VI/1984.

Remarks: This sponge is thick massive, size up to 4cm × 30cm × 0.5cm. Oscules are slightly elevated with oscular rims. Surface is smooth and texture is fragile. Colour in life is violet, but in spirits is white yellow. Ectosome is irregular isodictyal reticulum without spongin.

Spicules: Oxea .... 120-200 × 5-10μm.
Slender oxea .... 110-180 × 1- 2μm.

Distribution: Korea (Cheju-Island), the Mediterranean Sea, the Canary Islands, the Azores.

32. **Haliclona ulreungia sp. nov. 울릉보라해면 (Pl. 7, Figs. 1-4)

Material examined: One specimen, Ullŭngdo (Todong), 11/VII/1984, C.J. Sim.

Holotype: Por. 10, Deposited in Natural History Museum of Han Nam University.

Description: This sponge is irregular massive and size up to 5cm × 3cm × 1cm. Pores are dispersed on the body. Oscules are slightly elevated with oscular rims, and size up to 0.5mm in diameter, Surface is smooth and texture is very soft and fragile. Dermal membrane is specialization. Spicules are irregular reticulation. Colour in spirits is pale ivory.

Spicules: Oxea .... 103-179 × 3-8μm.
Slender oxea .... 100-165 × 1-2μm.

Remarks: The new species is similar to *Haliclona permollisimilis* Hoshino, 1981 in spiculation, but differs in sponge surface. The new species is dermal membrane specialization.

Distribution: Korea (Sea of Japan).

Family Adociidae De Laubenfels, 1936 아도시해면 과

33. Petrosia ushitsuensis Tanita, 1963 바위해면

Material examined: Sŏgwip'o, 5/VII/1984.

34. *Petrosia nigricans Lindgren, 1897 검정바위해면 (Pl. 7, Figs. 5-6)

Petrosia nigricans Lindgren, 1897 [cited from Burton, 1959 (p. 222)].
Petrosia nigricans: Burton, 1959 (p.222).
Petrosia imperforata: Thiele, 1899 (p.20, pl.2, fig.7, pl.5, fig. 12).
Petrosia nigricans var *irregularis:* Hentschel, 1912 (p.405).
Petrosia mammiformis: Dendy, 1921 (p.36, pl.12, fig.6).

Material examined: Sŏgwip'o (fish net), 14/VII/1982.

Remarks: The sponge is thick-walled, tubular processes, rising from a basal crust and each ending in a wide, circular vent. Oscules are dispersed on the gastral part. Texture is hard, but fragile. Colour in spirits is ivory.

Spicules: Stout oxea .... 253-346 × 13-17μm.
Slender oxea .... 253-306 × 3- 6μm.
Micro oxea .... 86-130μm.

Distribution: Korea (Cheju-Island), North Atlantic, Celebes, Ceylon, Indian Ocean.

Family Renieridae Schmidt, 1870 레니에해면 과

35. *****Gellius arcoferus*** Vosmaer, 1885 판솜덩이해면 (Pl. 8, Figs. 1-2)

Gellius arcoferus Vosmaer, 1885 (p.29, pl.4, fig. 18, pl.5, figs. 87-90).

Gellius arcoferus: Fristedt, 1887 (pp. 438-439, pl.24, figs. 29-31, pl.28, fig. 16); Lundback, 1902 (pp.62-63, pl. 12, figs. 11a-c).

Material examined: Sŏgwip'o (fish net), 14/VII/1982.

Remarks: This sponge is flat from, size up to 4cm × 5cm × 0.3cm. Surface is uneven. Texture is hard, but fragile. Dermal membrane is thin. Pores are dispersed on the body and oscules are 0.1-0.2mm in diameter. Colour in alcohol is ivory.

Spicules:	Oxea	411-450 × 14-23μm.
	Slender oxea	350-370 × 4- 7μm.
	Toxa	48-100μm.
	Sigma	14-19μm.

Distribution: Korea (Cheju-Island), Ellesmere Island, Davis strait.

36. *****Reniera ventilabrum*** Fristedt, 1887 판레니에해면 (Pl. 8, Figs. 3-5)

Reniera ventilabrum Fritedt, 1887 (p. 420, pl.24, fig.3, pl.27, fig.8).

Material examined: Mosŭlp'o (fish net), 18/VII/1987.

Remarks: The shape is massive, size up to 10cm × 6cm × 2cm. Surface is smooth. Pores are dispersed on the body and oscules are 0.3mm-0.6cm in diameter. Texture is fragile. Colour in life is red purple, but in spirits is yellow or brown.

Spicules:	Oxea	112-224 × 8-14μm.
	Slender oxea	112-210 × 1- 3μm.

Distrubution: Korea (Cheju-Island), the Atlantic Ocean.

37. *****Reniera pigmentifera*** Dendy, 1905 보라판레니에해면 (Pl. 9, Figs. 1-4)

Reniera pigmentifera Dendy, 1905 (p. 143, pl.4, fig. 10).

Material examined: Sŏngsanp'o, 30/VI/1984; Sŏgwip'o, 2/VIII/1984.

Remarks: This sponge is incrusting on the ston. Pores are dispersed on the body. Surface is a little hair with the protruding spicules. Oscules are 0.1-0.8mm in diameter. Texture is very soft and fragile. Skeleton is irregular isodictyla network. Colour in life is pale purple, but in spirits is ivory.

Spicules:	Thick oxea	137-145 × 6-10μm.
	Style	106-132 × 5- 6μm.
	Strongyle	97-117 × 8- 9μm.

Distribution: Korea (Cheju-Island), South Africa.

Family Callyspongiidae De Laubenfels, 1936 예쁜이해면 과

38. ***Callyspongia elegans*** (Thiele, 1899) 예쁜이해면

Material examined: Mosŭlp'o, 19/VII/1987.

39. ***Callyspongia confoederata*** (Ridley, 1884) 보라예쁜이해면

Material examined: Sŏgwip'o, 29/XII/1986.

40. *Callyspongia elongata* (Ridley & Dendy, 1886) 길쭉예쁜이해면

Material examined: Mosŭlp'o, 6/VII/1986, 18/VII/1987, 29/VI/1988; Sŏdo, 28/VII/1988.

Family Coelosphaeridae Hentschel, 1923 강해면 과

41. ****Coelosphaera physa* (Schmidt, 1875) 거품강해면 (Pl. 10, Figs. 1-6)

Desmancido physa Schmidt, 1875 [cited from Lundback, 1910 (p. 11)].

Cornulum ascidioides Fristedt, 1887 (p. 495, pl. 25, figs. 1-2, pl. 29, fig. 21).

Histiderma physa: Thiele, 1903 (p. 385, pl. 21, figs. 16a-b); Lundback, 1910 (pp.11-13, pl.1, figs. 12-13, pl.4, fig.3).

Coelosphaera physa: Hentschel, 1929 [cited from De Laubenfels, 1936 (p.71)].

Material examined: Anhŭng, 27/X/1984.

Remarks: Collected specimens are thin fragmented. Surface is uneven, and dermal membrane is present. Pores are dispersed on the body, but oscules are not oberved. Texture is very soft and fragile. Colour in spirits dermal part is pale grey, and gastral part is dark grey.

Spicules:	Tylote	221-400 × 4-10μm.
	Isochela	18-54μm.
	Raphid	60-100μm.

Distribution: Korea (Yellow Sea), the Atlantic Ocean.

ABSTRACT

The identified Ceratinomorpha consist of 41 species, 21 genera and 12 families. Among them, two species, *Clathria mosulpia* and *Haliclona ulreungia,* were new species and the following species were new to Korea: *Ophlitaspongia pennata california* De Laubenfels, 1936, *Desmacella rosea* Fristedt, 1887, *Clathria dayi* Levi, 1963, *Clathria parva* Levi, 1963, *Axociella cylindrica* Hallman, 1920, *Axocielita calla* (De Laubenfels, 1934), *Myxilla sigmatifera* (Levi, 1963), *Haliclona perlucida* (Griessinger, 1971), *Petrosia nigricans* Lindgren, 1897, *Gellius arcoferus* Vosmaer, 1885, *Reniera ventillabrum* Fristedt, 1887, *Reniera pigmentifera* Dendy, 1905, and *Coelosphaera physa* (Schmidt, 1875).

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EXPLANATION OF PLATES 1-10

Plate 1

Figs. 1-4 *Ophlitaspongia pennata californiana De Laubenfels.*
1. entire animal.
2. surface of skeletal framework (SEM).
3. a seventy times enlarged skeletal framework (SEM).
4. megasclere : A, large subtylostyle; B, small subtylostyle; C-D, slender style.
Microsclere : E, large toxa; F-G, small toxa.

Plate 2

Figs. 1-2 *Desmacella rosea* Fristedt.
1. entire animal.
2. megasclere : A, large tylostyle; B, middle tylostyle; C, small tylostyle.
Microsclere : D, large sigma; E, small sigma.

Plate 3

Figs. 1-5 *Clathria mosulpia* sp. nov.
1. entire animal.
2. surface of skeletal framework (SEM).
3. two hundred times enlarged skeletal framework (SEM).
4. gastral part of skeletal framework (SEM).
5. megasclere : A-B, subtylostyle; G, acanthostyle.
microsclere : C-D, large spiny toxa; E-F, toxa H. isochela.

Plate 4

Figs. 1-2 *Clathria dayi* Levi.
1. entire animal.
2. megasclere : A, thick style; B, slender style; C, acanthostyle.
microsclere : D, large spiny toxa; E, toxa; F, isochela.

Figs. 3-4 *Clathria parava* Levi.
3. entire animal.
4. megsclere : A, style; B, haed in spiny style; C, acanthostyle.
microsclere : D, spiny toxa; E, isochela.

Plate 5

Figs. 1-2 *Axociella cylindrica* (Ridley & Dendy).
1. Entire animal.
2. Megasclere : A, large trachy style; B-C, trachy style; D, slender style.
Microsclere : E, large isochela; F, small isochela.

Figs. 3-5 *Axocielita calla* (De Laubenfels).
3. Entire animal: A, front; B, back.
4. Surface of skeletal framework (SEM).
5. Megasclere : A, subtylostyle; B, slender style; C, small subtylostyle.
Microsclere : D, large toxa; E, small toxa; F, isochela.

Plate 6

Figs. 1-2 *Myxilla sigmatifera* (Levi).
1. entire animal.
2. megasclere : A, trachy style; B, smooth style; C, tornote.

microsclere : D, large sigma; E, small sigma;
F, large isochela; G, small isochela.

Figs. 3-5 *Haliclona perlucida* (Griessinger).

3. entire animal.

4. surface of skeletal framework (isodictyal reticulum) (SEM).

5. megasclere : A, oxea; B, slender Oxea.

Plate 7

Figs. 1-4 *Haliclona ulreungia* sp. nov.

1. entire animal.

2. dermal membrane (SEM).

3. surface of skeletal framework (SEM).

4. megasclere : A, oxea; B, slender oxea.

Figs. 5-6 *Petrosia nigricans* Lindgren.

5. entire animal.

6. megasclere : A, shout oxea; B, micro oxea.

Plate 8

Figs. 1-2 *Gellius arcoferus* Vosmaer.

1. entire animal.

2. megasclere : A, oxea; B. slender oxea.
microsclere : C, toxa; D, sigma.

Figs. 3-5 *Reniera ventilabrum* Fristedt.

3. entire animal.

4. surface of skeletal framework (SEM).

5. megasclere : A, oxea; B, slender oxea.

Plate 9

Figs. 1-4 *Reniera pigmentifera* Dendy.

1. entire animal.

2. surface of skeletal framework (SEM).

3. three hundred times enlarged skeletal framework (SEM).

4. megasclere : A, oxea; B, style; C, strongyle.

Plate 10

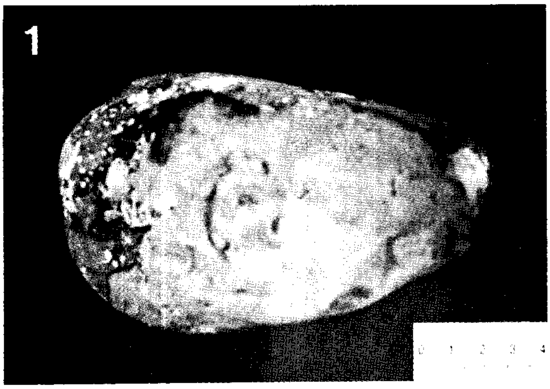
Figs. 1-6 *Coelosphaera physa* (Schmidt).

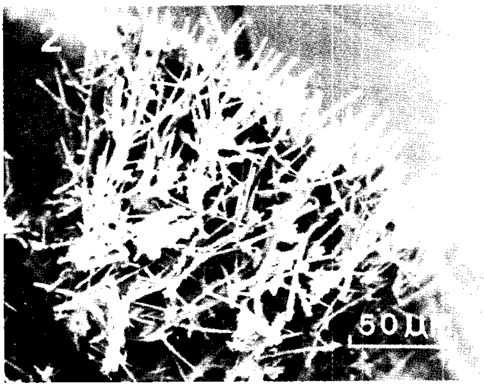
1. entire animal.

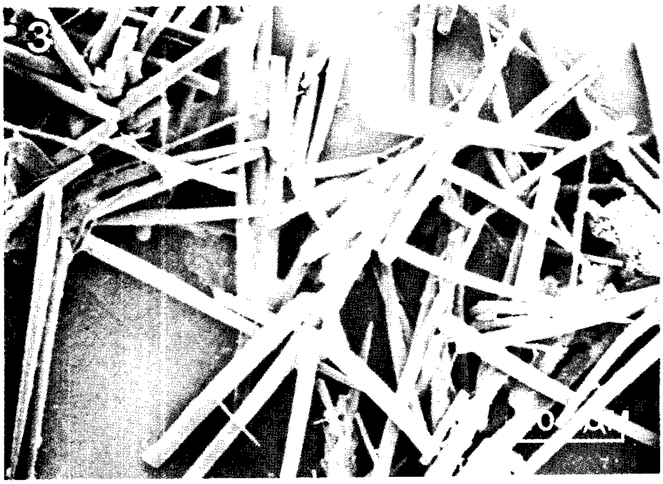
2. surface of skeletal framework (SEM).

3. 4. tylote (SEM). **5.** isochela (SEM). **6.** raphid (SEM).

PLATE 1







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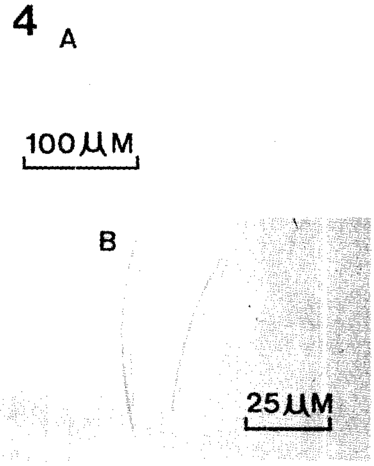

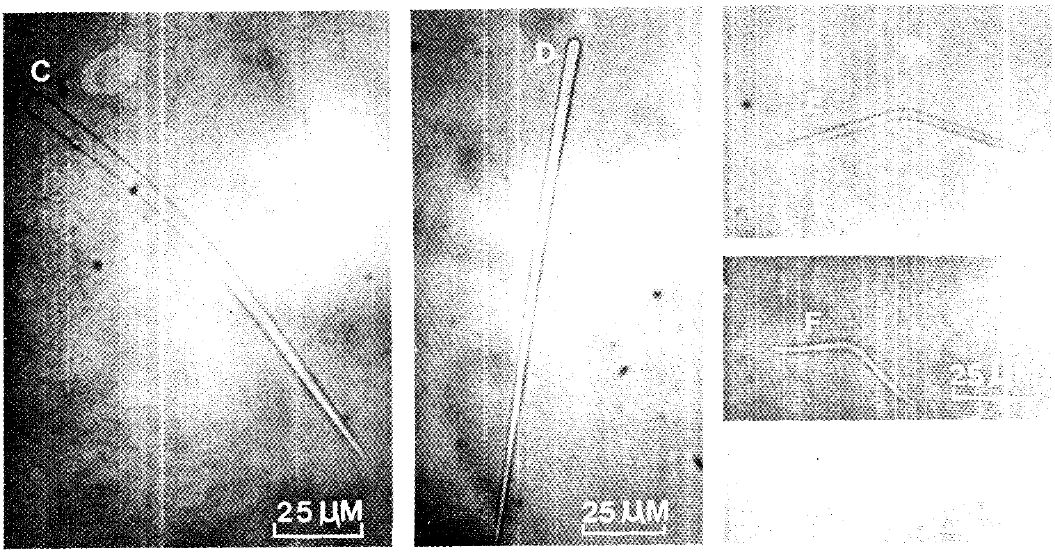

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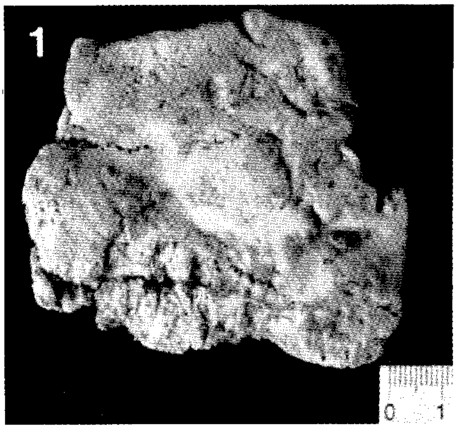

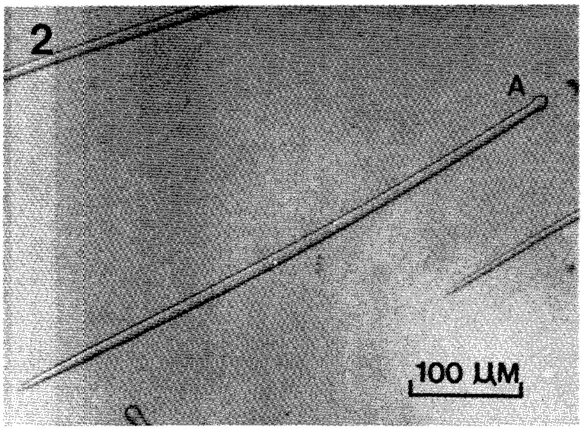

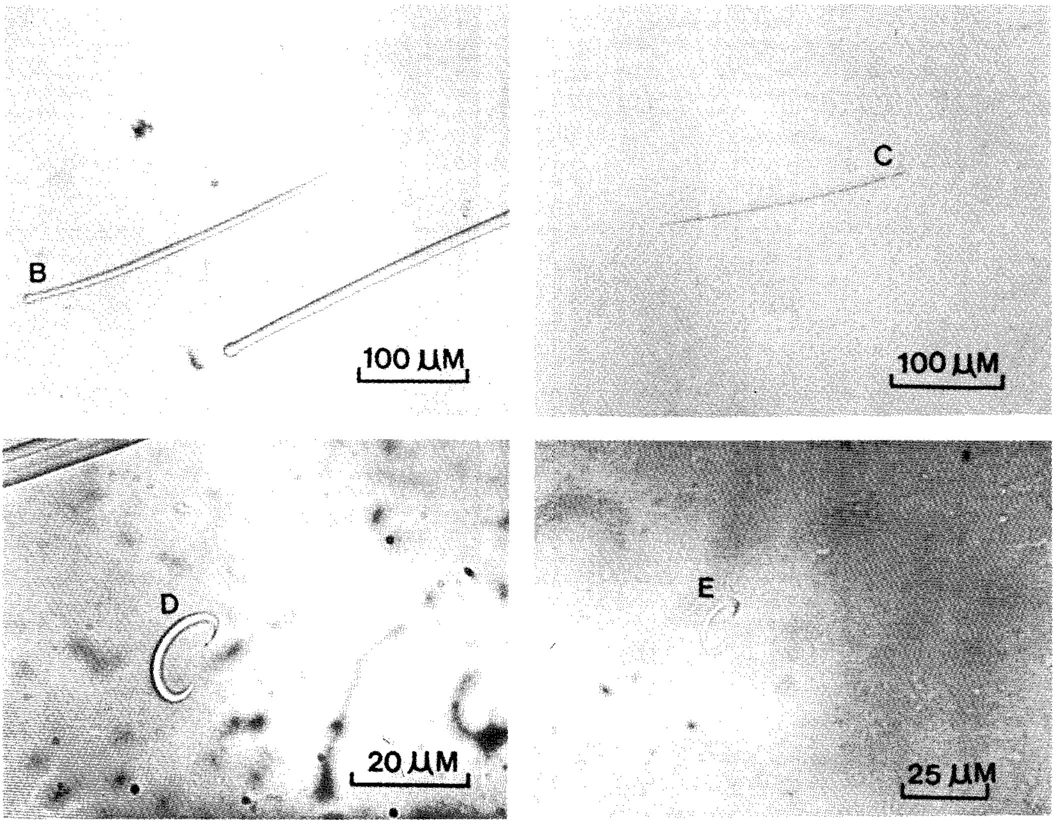

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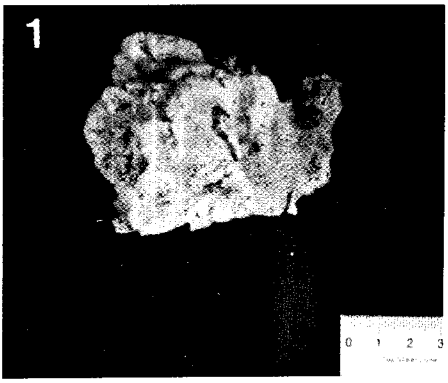
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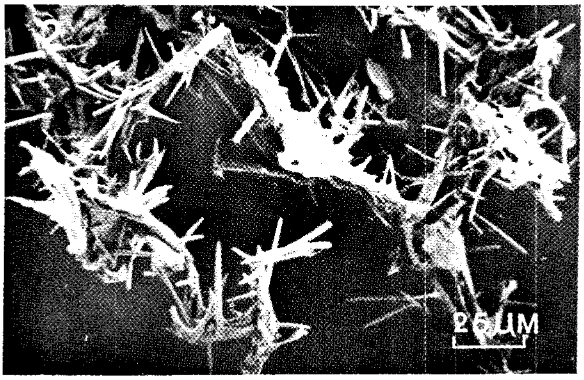
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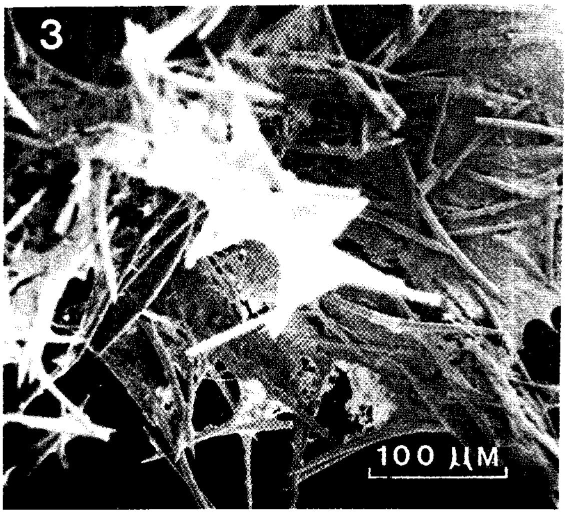
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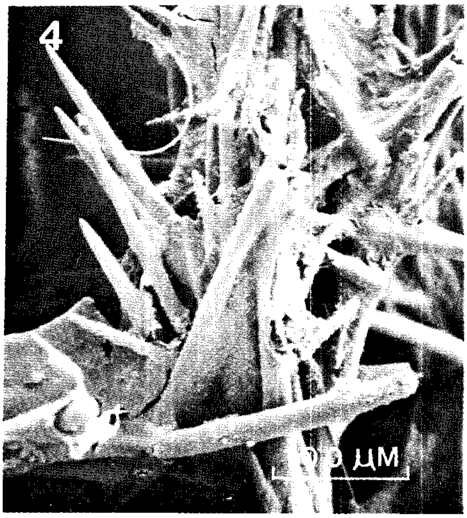
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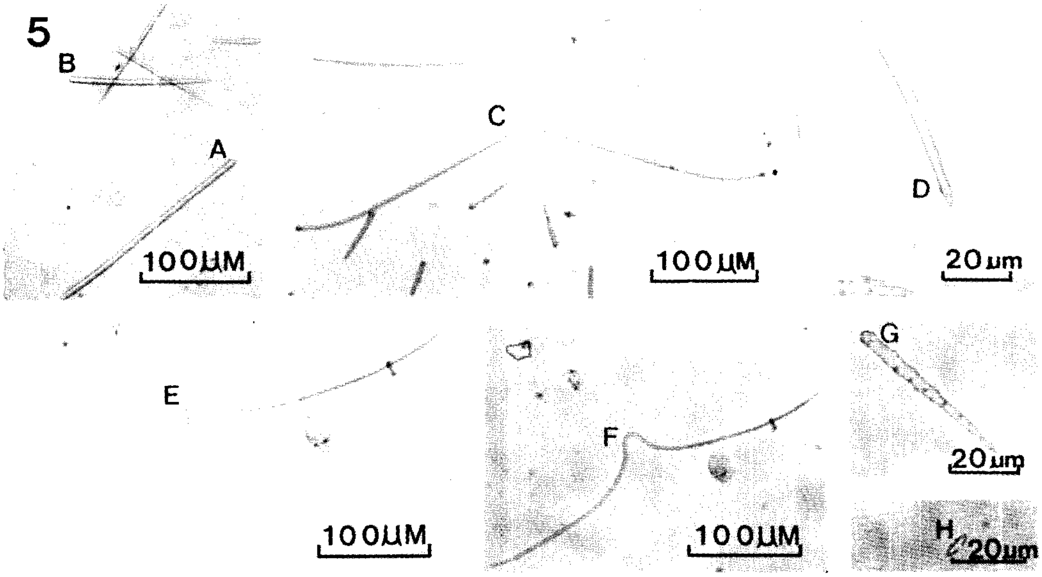
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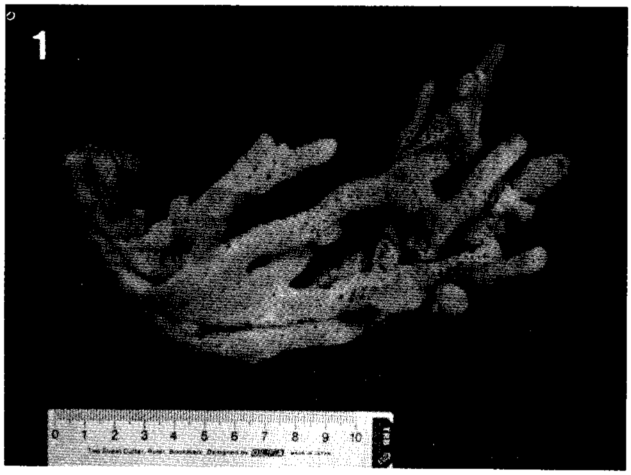
B
C
A
D
100µM
100µM
20µm
E
G
F
20µm
100µM
100µM
H
20µm

PLATE4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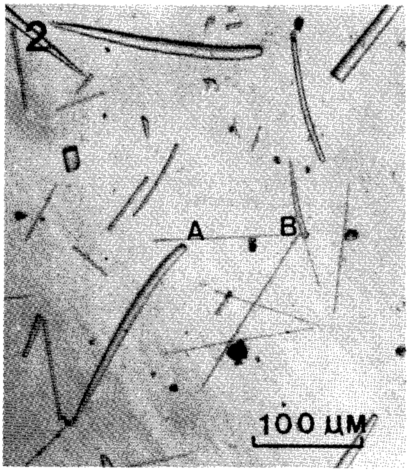
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B
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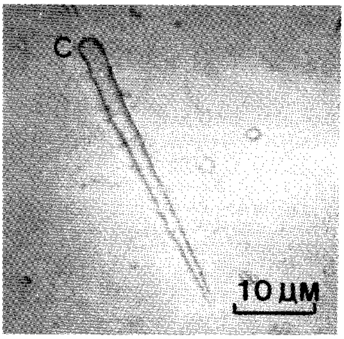
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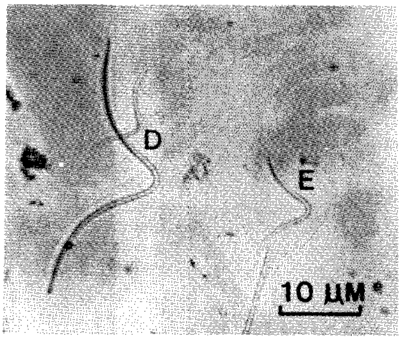
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E
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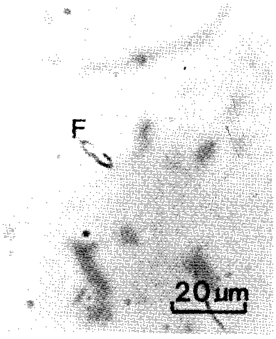
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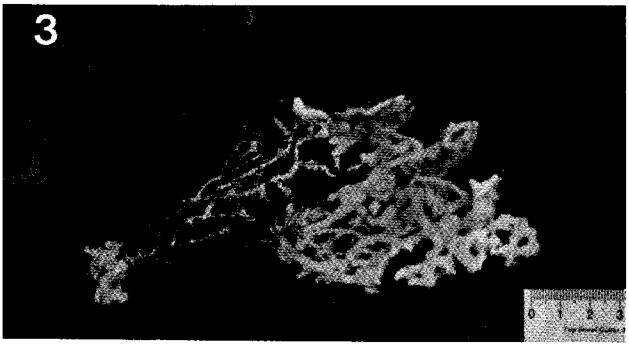
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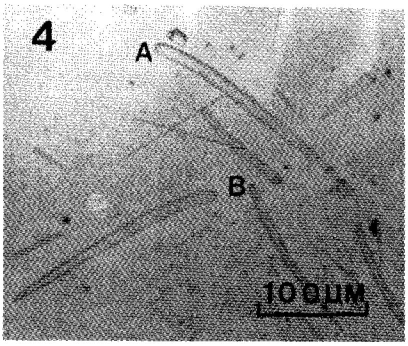
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B
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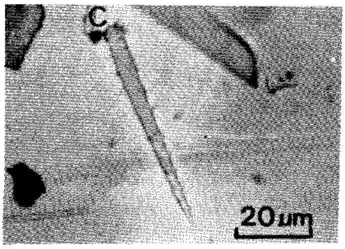
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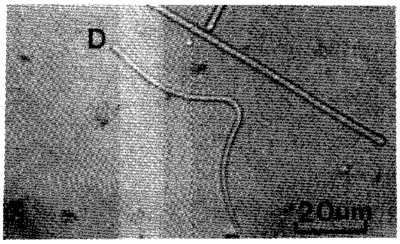
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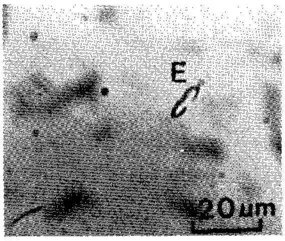
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PLATE 5

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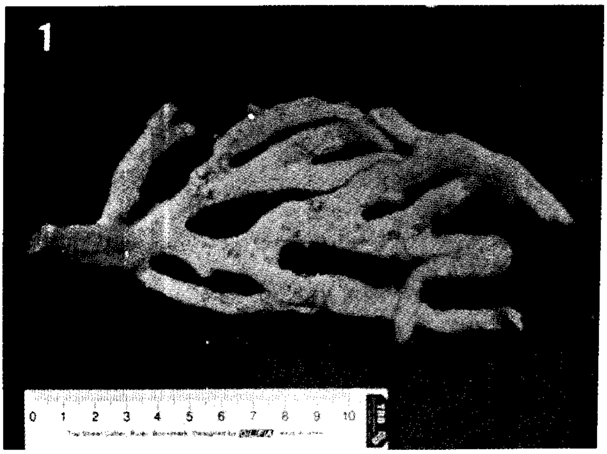

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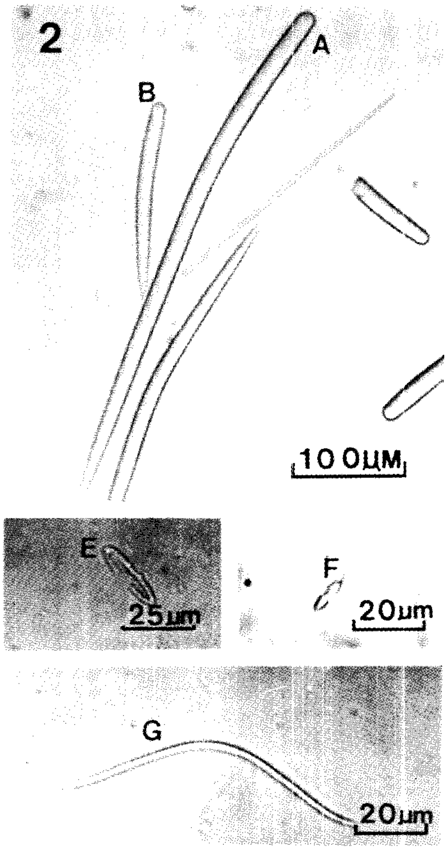

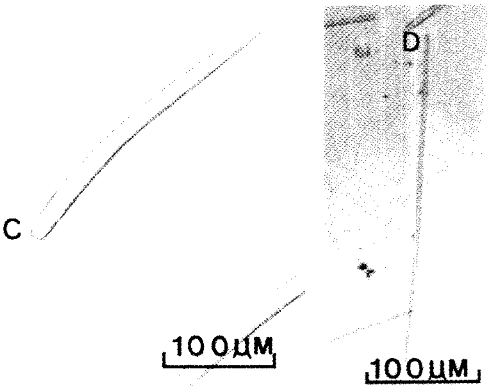

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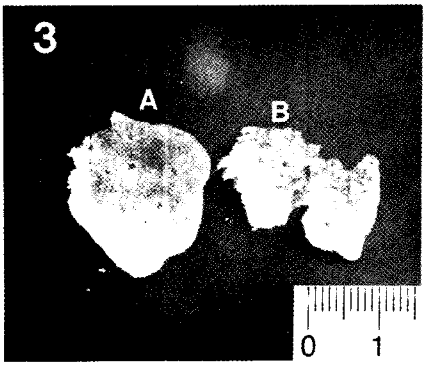

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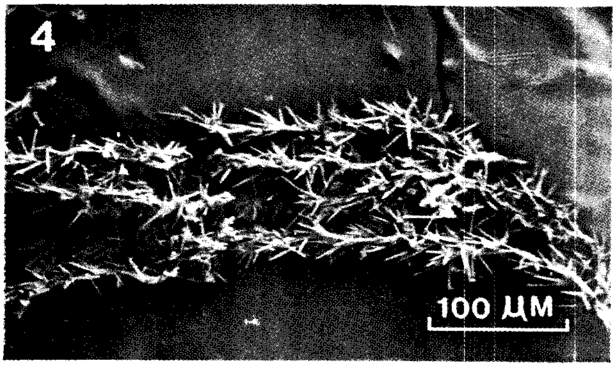

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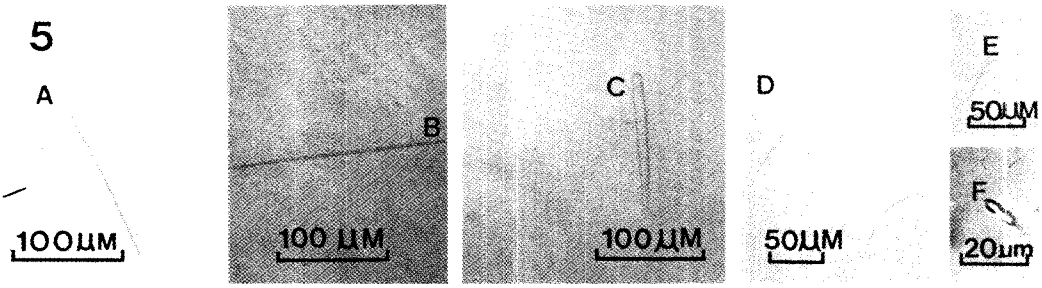

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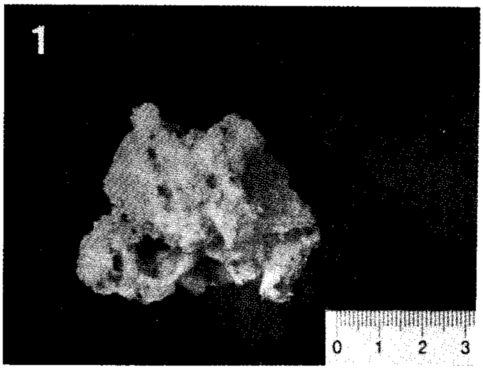
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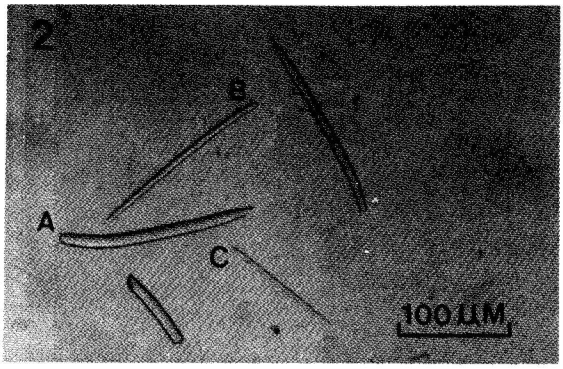
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B
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C
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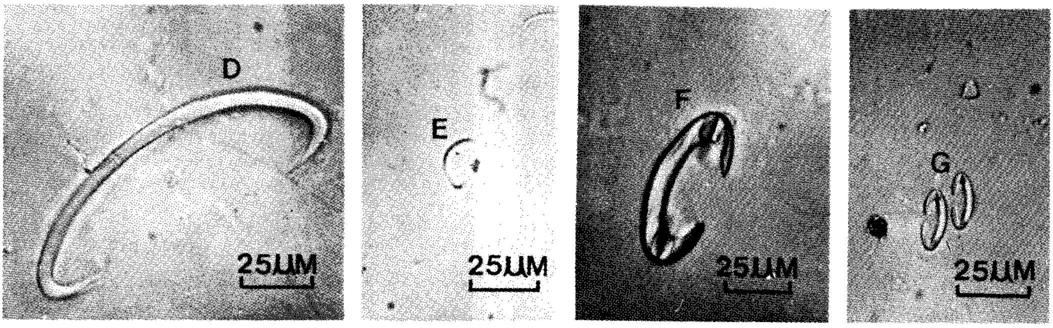
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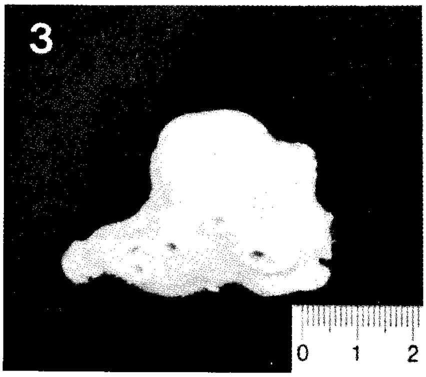
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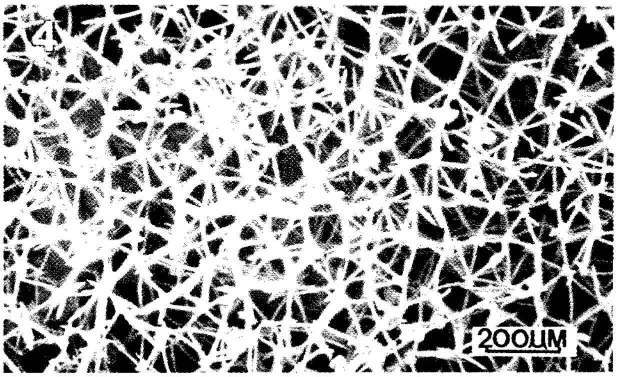

4
200UM

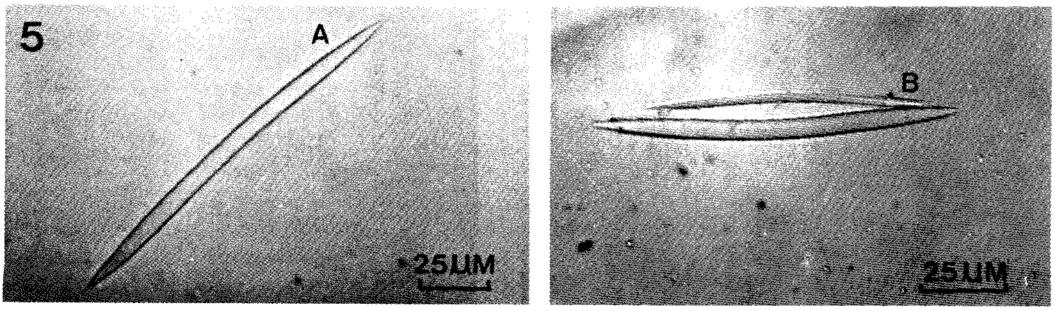
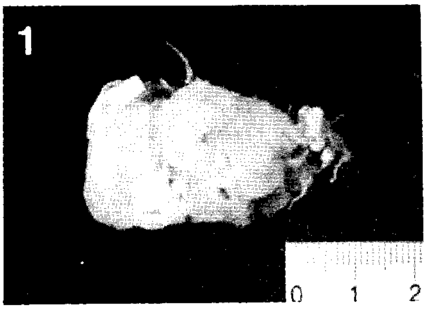
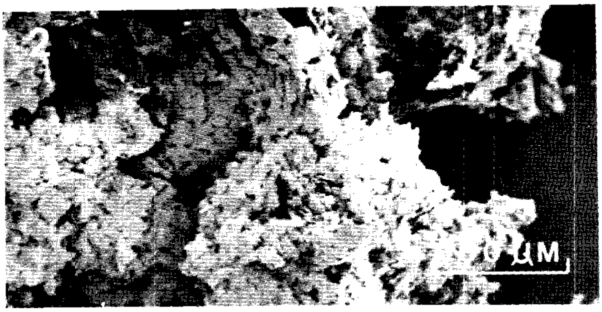
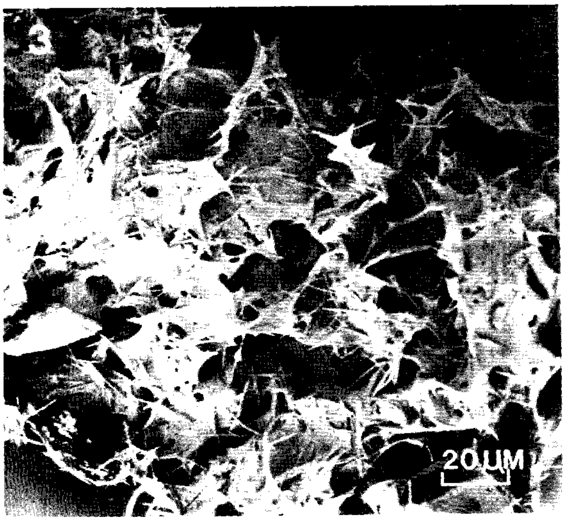
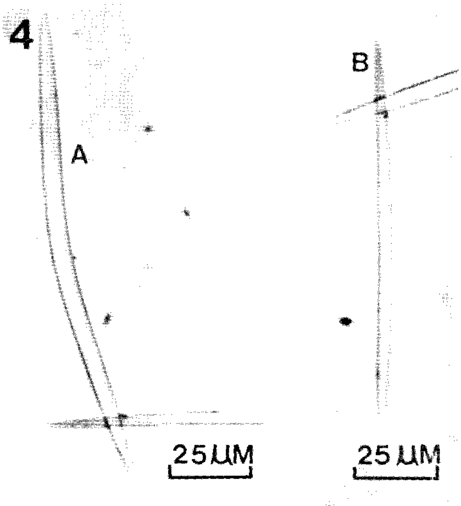

5
A
25UM
B
25UM

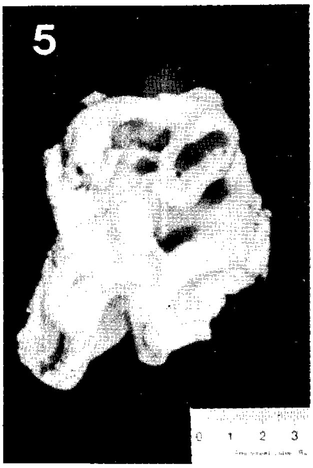
PLATE 7











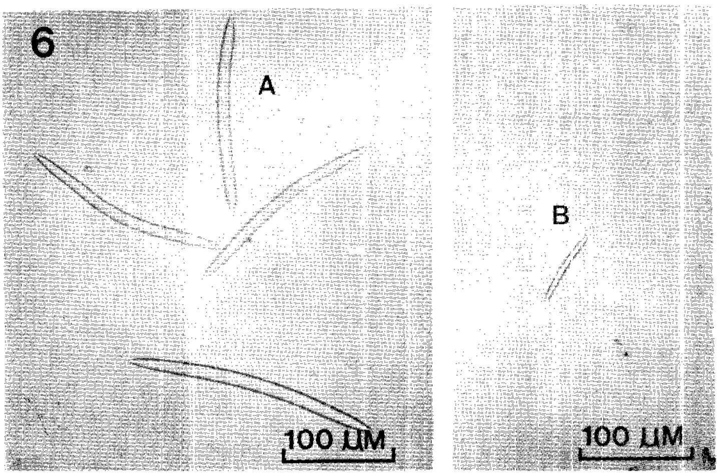
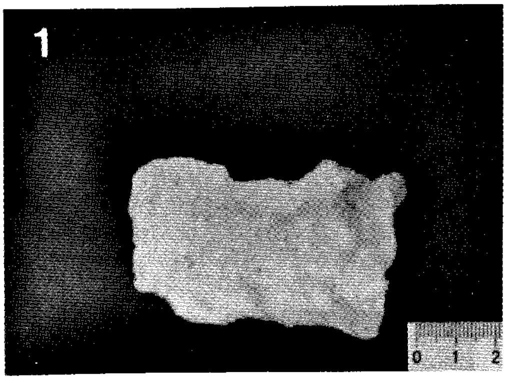
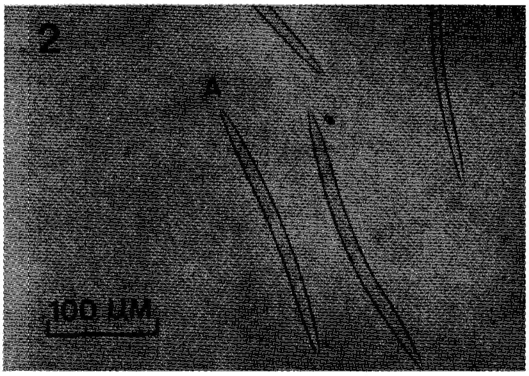
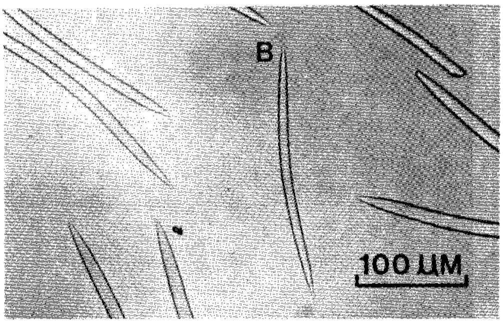
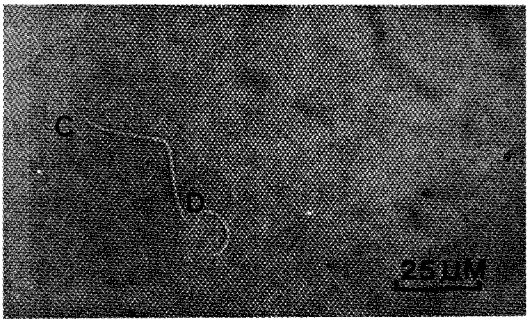


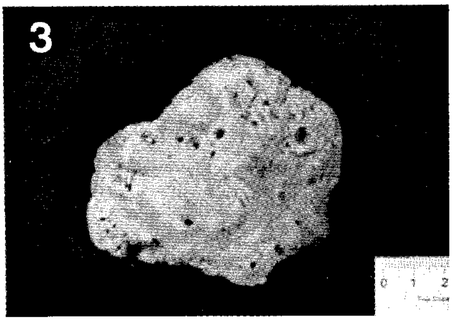
PLATE 8

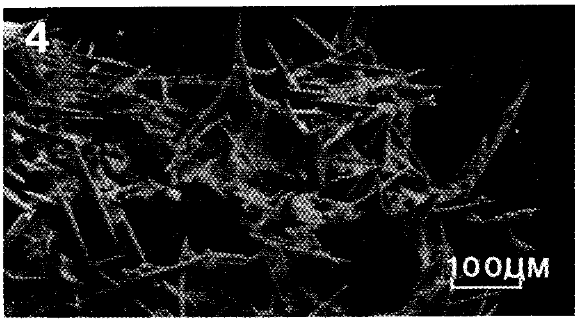












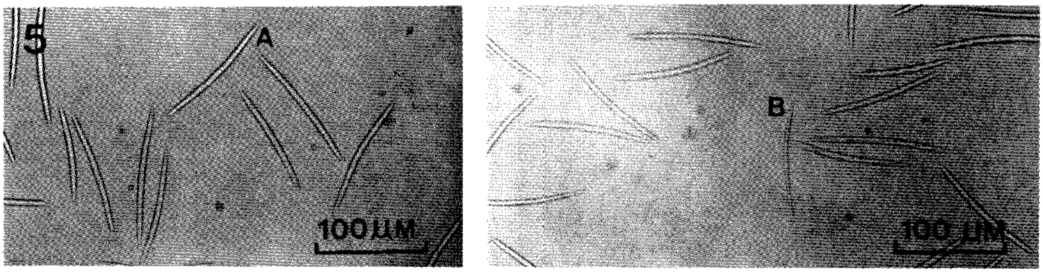
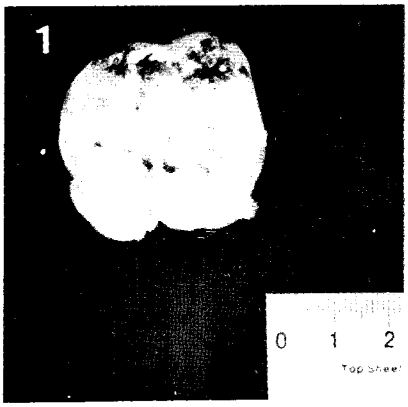
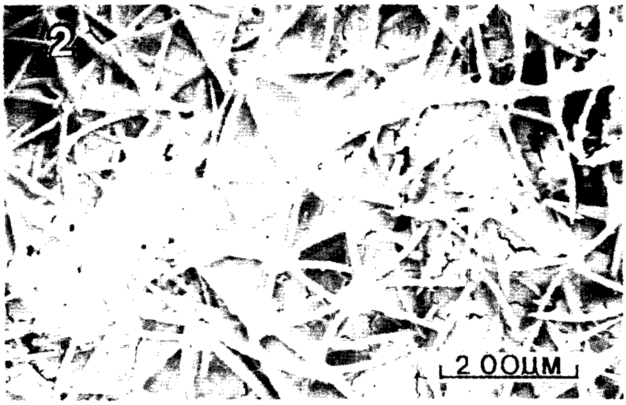
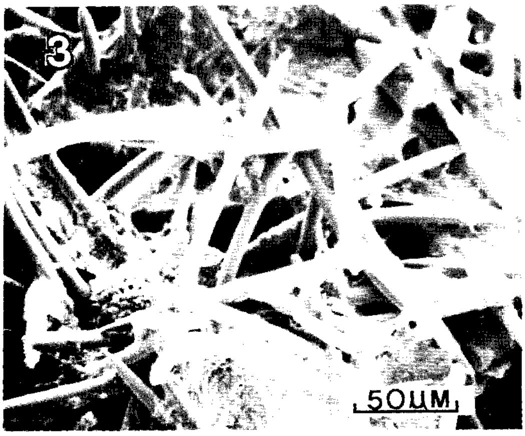
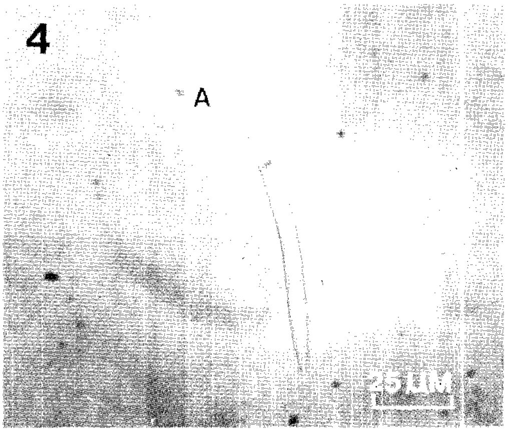


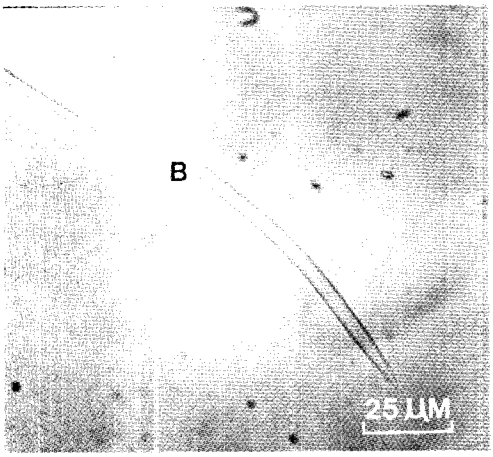
PLATE 9











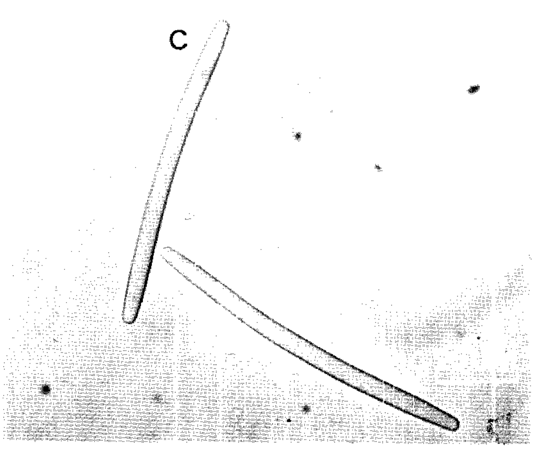


PLATE 10